

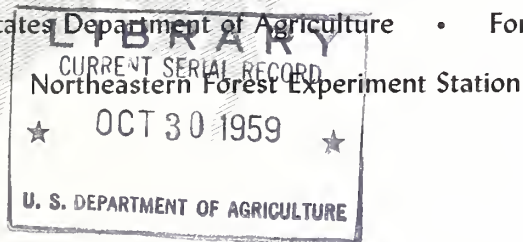
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NORTHEASTERN FOREST PEST REPORTER

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FOREST INSECTS

The forester, the entomologist, and that odd character the forest entomologist are pretty much aware of the strong influence of weather and climate on the forest trees, the insects that feed on these trees, and the forest community as a whole. Some direct effects are well known -- drought conditions leading to increased attack by generally non-aggressive or secondary pests, early spring frosts killing both new shoots and insects, very low winter temperatures or alternate freezing and thawing reducing insect populations, and so forth.

Less evident are the effects of weather on insect development and behavior and the relation of these to rate and amount of damage to the forest. Feeding, mating, egg laying, dispersal, in fact nearly all activities of the insect are geared to light, temperature, humidity, and air movement. Even the changing length of day (and night) influences the development and activity of insects -- and thus the damage caused by them. Moreover, the pattern of activity determines in what way and for how long the insect is exposed to its natural enemies. It is now known that air mass climatology and the periodicity of climatic changes may play a key role in the development of outbreaks. Needless to say, these and other interrelationships of the major insect pests, the trees and forest, and weather and climate are very much in need of detailed study.

Until we have the needed bioclimatic information, both our long- and short-range predictions of population changes and insect-caused damage are shrewd guesses at best -- and our best suggestions of what to do about a given situation may still put us slightly out on the familiar limb.

SPRUCE BUDWORM (*Choristoneura fumiferana*) The aerial and ground surveys in Maine this year revealed moderate to heavy infestation confined to an area west of Route 11 from Hedgehog Mountain on the north, south to Ashland, and west to about Carr Pond, and an area southwest of Squapan Mountain; total area is about 82,000 acres. This is outside of the sprayed area for the most part, but the egg-mass survey showed moth flight

eastward into the sprayed area. The western boundary has for several seasons remained very nearly stationary, movement always being eastward with the westerly winds. There are about 175,000 acres of light feeding around the moderate-heavy area, with widely scattered spots of feeding extending farther east and north to Van Buren. This season was one of luxuriant fir growth and rapid larval development. Parasitism was less than expected for both larvae and pupae due, perhaps, to the rapid development of the larvae which in turn reduced exposure to the parasites. The spray this past spring was very effective in reducing the budworm population; however, there is a significant number of budworms in the area west of Portage Lake.

WHITE-PINE WEEVIL (Pissodes strobi) The many reports from throughout the Northeast this year--some with observations of increased damage and others denoting continuation at former levels--reveal that the weevil is still our most serious deterrent to the production of white pine. Control efforts in the northeastern states are being stepped up, and a number of tests using various materials and methods were conducted this year. In a cooperative field test by the U. S. Forest Service and the New York Conservation Department, using airplane and helicopter applications of DDT and some other toxicants with an extender, the results were again inconsistent although excellent control was obtained in some treated blocks. An early emergence of the weevil was reported in Vermont on April 21, and it was reported over the Northeast on Norway, Colorado, and red spruce; Scotch, Austrian, and of course white pine. A speciation study under way at New Haven between P. strobi and P. approximatus, each taken from its "typical" location, to determine whether these sympatric organisms are genetically distinct or whether they are merely behavioral or ecological types, has produced viable offspring from all crosses. The progeny are being reared after which further crosses will throw further light on this problem.

BALSAM WOOLLY APHID (Adelges piceae) This aphid, with the dubious distinction of being one of the two insects causing the heaviest loss of fir production in the Northeast, has been with us a long time. Nevertheless, too few people realize the impact that this bug has on the tree. In the Green Mountain National Forest in Vermont, 21 percent of merchantable volume was killed between 1951 and 1956, and 75 percent was infested. Newly infested trees are seen each year. Similar figures describe the situation in New Hampshire, and in Maine a heavy annual loss is also felt. This is from stem attack principally, where the trees fade, turn red, and lose their foliage. In Washington and Hancock Counties, Maine, the impact of aphid damage is more subtle, because attack is principally on twigs and small branches at the top of the trees--the "gout" disease of coastal areas. Dead tops and poor form class prevail. Great losses of merchantable volume result, and the worthless trees occupy the area. The possibility of control by imported predators is being studied at the Penobscot Experimental Forest near Bangor, Maine. Ground work and aerial photography were completed this fall by U. S. Forest Service Personnel from Beltsville and New Haven in cooperation with the Maine Forest Service and the Vermont Department of Forests and Parks in a preliminary investigation to determine the feasibility of aerial photography for detecting and appraising aphid damage.

PINE SAWFLIES The European pine sawfly (Neodiprion sertifer) was a prominent defoliator of Scotch and red pine in the northeastern quarter of Pennsylvania in the spring; it reached extensive and serious proportions in New York; and it was a serious pest in Connecticut and northern New Jersey this summer. A virus spray was provided by the New Haven Laboratory to the Pennsylvania Department of Forests and Waters and a Christmas-tree grower in Connecticut, and both applications were successful. Diseased specimens were collected subsequently and stored for source material next year. Late summer feeding by the red-headed pine sawfly (N. lecontei) has been reported from New Castle County, Delaware, where it is moderate on white pine. They were collected in

Cambria County, Pennsylvania, on August 24; and moderate damage in early August was reported to Austrian pines on Catoctin Mountain, Frederick County, Maryland. Sawflies of the N. pratti complex defoliated extensive areas in Delaware, Maryland, and New Jersey again this year. From the Division of Plant Industry, Department of Agriculture, New Jersey, comes a report of the sawfly N. pini-rigidae occurring at 50 locations on pitch pine in a 1,000 square-mile area in southern New Jersey. Here, there are two generations per year, one in the early summer which feeds on both new and old needles, and the other in the fall which eats the remainder. So the potential of this sawfly to do damage is great. It is indicated that this sawfly species may not be vulnerable to established parasites which are controlling N. pratti paradoxicus in the area, and there is a possibility of an increase to more serious levels next year.

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) Always taking its toll in red and Scotch pine, this moth was quite active again in the western two-thirds of the Northeast. Injury to trees was reported generally no worse than last year over most of the area, but on Maryland's Lower Eastern Shore tip moths were again the chief insect pests in the forests. R. frustrana, the Nantucket pine tip moth, commenced pupation near Oxford, Chester County, Pennsylvania, about August 27.

MISCELLANEOUS INSECTS ON CONIFERS The pine leaf aphid (Pineus pinifoliae) migrated from red and black spruce to white pine the second week in June in eastern Maine, where the needles were literally lined with the black migrating females. Larger trees are being infested now than were before, and the accumulative effects of attacks of previous years are becoming serious. Spruce gall aphids (Chermes abietis) were reported in New York, Pennsylvania, and Maryland this year, and in Maine they were generally common and locally heavy. The Cooley spruce gall aphid (C. cooleyi) was quite heavy throughout New York this season with 50 percent of laterals affected in some areas. Bark and turpentine beetles were generally abundant this year. In western New York State populations of Ips appear to be building up. There was an excellent cone crop on white pine this year despite the cone weevil, Conophthorus coniperda. The larch sawfly (Pristiphora erichsonii) was reported from Maine and Pennsylvania, increasing in numbers in the former.

FOREST TENT CATERPILLAR (Malacosoma disstria) This lasiocampid stripped oaks over large portions of Pennsylvania, Maryland, and West Virginia this year; and, judging by the number of egg masses, serious damage may occur next year unless weather or diseases and parasites intervene. Tree mortality may occur if drought conditions prevail and trees on dry ridges would be expected to succumb first. In Somerset and Fayette Counties, Pennsylvania, and at Elkins, West Virginia, diseases and Sarcophaga practically wiped out the larvae, but for the most part the outlook is for locally severe defoliation next year. The eastern tent caterpillar (M. americanum) appeared in the largest numbers for several years and defoliated even some oaks.

GYPSY MOTH (Porthetria dispar) The following is a 1959 summary from Harry L. Smith, Regional Supervisor, Plant Pest Control Division, ARS, New Jersey: "Aerial surveys in 1959 indicate buildup of infestation in several widely scattered locations throughout the generally infested area in New England and eastern New York. A total of 14,467 acres of defoliation was reported as follows: Maine--York County, 1,000 acres; New Hampshire--Merimack River Valley, 2,000 acres, and in the towns of Walpole and Langdon bordering the Connecticut River, 2,000 acres; Vermont--Champlain Valley, numerous small spots totalling 1,500 acres; Massachusetts--1 small spot in Barnstable County on Cape Cod, 1 spot in the Haverhill-Methuen area bordering the Merrimack River, and Mount Lizzie Island in Quabbin Reservoir, totalling 382 acres; Connecticut--New Haven and Hartford Counties in 15 towns, totalling 5,980 acres; and New York in 13 towns in the Upper Hudson and Champlain Valley areas, totalling 1,605 acres. No

defoliation observed in Rhode Island. Aerial surveys in 1958 showed only 117 acres of defoliation in Connecticut and 8 acres in Massachusetts for a total of 125 acres, a record low."

"During the 1959 adult season 30,303 traps were employed to systematically survey territory in adjacent areas of New York, New Jersey and Pennsylvania, including all areas treated to date for eradication. In Pennsylvania, only 1 male moth was captured--in the town of Carroll, Perry County. In New Jersey, single moths were caught at two trap sites in the town of Montague, Sussex County, and at five trap sites in Jockey Hollow National Park in Morris County. Data for New York is incomplete at this time; however, no moths were recovered outside the regulated area. An additional 1,798 traps were used to survey roadsides and selected locations in Maine, Vermont, Maryland, Delaware, Virginia, and West Virginia. Survey results were negative in all states except Vermont, where single moths were caught at three trap sites in Lamoille County, in close proximity to the quarantine line."

ORANGE-STRIPED OAK WORM (Anisota senatoria) and the red-humped oak worm (Symmerista albicosta) have effected severe stripping of oak in Rhode Island, Pennsylvania, Connecticut, and New York. In Pennsylvania scarlet and scrub oaks were defoliated in the Pine Grove Furnace area. The orange-striped oak worm was much less severe in eastern Connecticut than last year, although there was scattered defoliation over about 4,000 acres in the southeastern quarter. About 2,000 acres in Connecticut on the Rhode Island border were defoliated by the red-humped and the orange-striped oak worms in combination.

MISCELLANEOUS INSECTS ON HARDWOODS Generally there has been widespread and severe injury to oaks this season by several of the complex of defoliators found on hardwoods. Two oak leaf miners have been particularly noticeable, the solitary (Cameraria hamadryadella) and the gregarious (C. cinninatiella) in Rhode Island, eastern Massachusetts, generally in Connecticut, and in Orange County, New York. The variable oak leaf caterpillar (Heterocampa manteo) has been reported in scattered locations. In Maryland, where some small spots were completely defoliated last year near Principio Furnace, some new areas were moderately attacked. Flat-headed borers (specimen received by the New Haven Laboratory and determined to be Agrilus sp. probably bilineatus) were taken from an unusually large number of dying oaks in southern New Jersey, pre-conditioned possibly as a result of severe defoliation by H. manteo in that area two to five years ago. The yellow-necked caterpillar (Datana ministra) is fairly heavy in New Castle County, Delaware, on pin oak.

The rather sudden appearances in large numbers of such insects as the forest tent caterpillar and oak leaf miners may be thought of as outbreaks, but it should be remembered that these insects are always with us in some numbers. From time to time one or several of these insects may flare up and be noticeably destructive. The real importance of these defoliators, however, is in the accumulative effects of leaf removal or damage over the years and consequent predisposition of hardwoods to attacks by secondaries, disease, and to susceptibility to adverse edaphic and weather effects.

The European elm scale (Gossyparia spuria) was reported very heavy in New Castle County, Delaware, and crawlers were out in early August. The beech blight aphid (Prociphilus imbricator) was very heavy in New Castle County also. The oyster-shell scale (Lepidosaphes ulmi) has been reported as causing repressed growth and scant foliage on beech and other hardwoods in McKean County, Pennsylvania. Walking-sticks defoliated 100 acres of oak in Lycoming County, Pennsylvania, and were common but not serious elsewhere.

FOREST DISEASES

Weather conditions were generally not favorable for many of the diseases, particularly the foliage and rust diseases. Although weather was variable for the entire Northeast, the following summary probably holds for most of the area. Cold temperatures of the winter months ceased rather abruptly about the 1st of May. Good growing temperatures were sustained thereafter with only temporary reversions. The spring spurt of growth was delayed for about one week. Rainfall was generally deficient the latter half of May and sporulation of many overwintering diseases was either halted or delayed. Heavy rains occurred in early June, before the May drought became serious, but early June temperatures were below normal. July conditions were generally favorable, but were followed by hot, sometimes muggy weather, then dry weather occurred. Rainfall deficiencies extended through much of the latter part of August and through much of September.

The effect on forest diseases of the above conditions is interesting. Early sporulation of foliage disease organisms and many of the rusts was reduced or delayed. Fleshy fungi fruiting was suppressed, but the effect on the more hardy basidiomycetes was somewhat variable. Some of the wilt diseases apparently increased. The late season drought intensified symptoms of some of the diebacks and late-developing foliage diseases. Foliage diseases were generally of minor importance and did negligible damage in the Northeast in 1959. Some were quite spottily distributed. For example, horse-chestnut blight was generally light through most of the New England states, but quite severe in other areas such as parts of Pennsylvania and western New York. Some of these effects will be mentioned later under the specific diseases.

For this third issue of the 1959 PEST REPORTER we have additional information from some of our collaborators on items mentioned in the first and second issues. In some cases we have included material meant for the second issue, but which was received after our copy was in the hands of the printer. For such late information, please accept our apologies.

FOLIAGE DISEASES

Anthracnoses.--Although causing little real damage, the hot, humid periods in August, with wet periods occurring, some anthracnoses made a late appearance. Maple and white oak anthracnose is reported from Pennsylvania, but damage is light to moderate and as they came near the end of the season, their effects should be slight. Gloeosporium apocryptum was cultured from Norway maple leaves sent in from Springfield, Pennsylvania. From eastern Massachusetts, anthracnose of sycamore and oak is reported as extremely light to non-existent; but nevertheless Gloeosporium spp. was reported from foliage of sugar maple in Rutland, birch in Amherst, red maple in Willimansett, and from Salix babylonica in North Adams--all in Massachusetts. Maine reported anthracnose as light on white oak in the Cape Elizabeth areas. New Hampshire reports anthracnose fairly common following long rainy periods of late June and early July.

Leaf spots.--Many of the leaf spots became more prominent and symptoms were intensified as fall approached and the late September drought began to exert its effects. The following reports were received. Relatively severe black spot (Gnomonia ulmea) occurred along Route 10 in northern Massachusetts on American elm and it was reported in Northampton and Amherst. Pennsylvania reports black spot of elm, cherry leaf spot, and Venturia scab on apple and related plants, as becoming evident during August and early September, but doing little damage. Gnomonia leptostyla occurred on black walnut resulting in premature defoliation. Both this and G. ulmea were widespread in the State. Symptoms of X-disease of cherry (a virus) were evident over

wide areas by the latter part of August. A report from eastern Massachusetts says Entomosporium leaf spot of hawthorn is prevalent. Phyllosticta sp. was reported on leaves of Rhododendron in Canton and Amherst, Massachusetts. Pennsylvania reports a Coryneum sp. cultured from chestnut oak sprouts. Tar spot of maple was of minor importance in New Hampshire this year.

Leaf blotches and blights.--The variety and severity of these diseases was less than usual for 1959. They were generally scattered and variable in severity at various localities, and they were late in appearing. Severity of symptoms increased as the season progressed and it was usually mid-August, or later, that they really became conspicuous. Horsechestnut leaf blotch (Guignardia aesculi) was scattered and light in the New England states, but in south-central Pennsylvania and parts of western New York the disease appeared earlier in the season and was much more severe. The occasionally severely infected trees in otherwise lightly infected areas may be due to local weather conditions, the ready supply of inoculum, or a difference in host susceptibility. The disease was generally considered light to heavy for New York State. Massachusetts reported a Taphrina leaf blister affecting several hundred acres of black oak in the vicinity of Mount Washington, Massachusetts. The same source reports a Fusicladium sp. on leaves of Babylonian willow in North Adams, Massachusetts. Maine reported occasional willow blight appearing by mid-June in Howland on a few weeping willows, and on the Niobe variety of willow in the Boothbay Harbor area. A recent report from eastern Massachusetts states that Fusicladium willow blight was quite extensive during the early part of the summer. Tip blight (Diplodia pinea) of Austrian and Scotch pine, previously reported from western Pennsylvania, appears to have increased in intensity. Botrytis tip blight affecting white spruce, hemlock, Norway, and blue spruce, previously reported from Maine, was not found during 1959. Absence of spring frost injury and the absence of the disease this season, supports the assumption of the relation of the Botrytis blight to frost injury. Pennsylvania reports leaf scorch of maple and birch and a needle-tip burning of conifers which seems to be correlated with August weather conditions. With the approach of fall, the September drought, and hot weather, an intensification of leaf scorch of maples occurred. This is a part of the symptomatic picture of the maple dieback complex and was particularly noted in the area south of Rochester, New York, but with scattered occurrences elsewhere. White pine needle blight was not very conspicuous in 1959 and few reports of it were received. Its occurrence, for the most part, was localized. Pennsylvania reported injury to white pines from needle blight near Stroudsburg. A report from the blister rust people tells of "some sort of needle blight" on pines at South Freeport, Maine; also of pines in poor condition, some dead, at Birch Point, New Meadows River, and West Bath, Maine. Some of the tree trunks were turning red and splitting, accompanied by considerable amounts of bleeding. It was suspected that substances used for dust control on dirt roads and the thin soil layer on rock ledges may have been contributing causes for the trouble in some cases.

CANKERS

Bleeding cankers of maple (Phytophthora cactorum) were reported on sugar and Norway maples from York, York Harbor, Kittery, and Sebago Lake, Maine. It was believed that fill and other weakening factors may have predisposed these trees to the disease. Bleeding cankers on declining maples seem quite common in central Vermont. Redbud canker (Botryosphaeria ribis) seems more prevalent than usual, according to a report from Pennsylvania; also, that the canker-stain disease (Ceratocystis fimbriata f. platani) has been found on four sycamores in Harrisburg. Cytospora canker (Valsa sp.) is reported from Maine occurring on ornamentals at Oxford and Winslow. Hypoxylon canker was reported from Fayette, Maine; and girdling of Lombardy poplars was reported from Boothbay Harbor. Massachusetts reports the conidial stage of Nectria canker (Nectria cinnabarina) on stems of 1-inch nursery trees of Sophora japonica received

at Amherst from Ohio. Nectria was fruiting abundantly in the vicinity of pruning wounds on Norway maples in Lewiston, Maine, and it was postulated that the disease may be readily spread by pruning tools. In New Hampshire beech bark disease continues to be serious in the northern part of the State. The Shade Tree Laboratories at Amherst, Massachusetts reports a number of fungi occurring on dead or cankered twigs from a variety of hosts, such as: Diatrype stigmatum on dead twigs of Salix discolor; black knot (Dibotryon morbosum) on Prunus sp.; a Sphaeropsis sp. cultured from cankered twigs of Robinia pseudoacacia; a Phoma sp. on stems of a dead white pine seedling; Cytospora sp. from branch cankers of gray birch, ash, white pine (trunk), sugar maple (trunk), and a Japanese maple dying from other causes; Steganosporium sp. on twigs of sugar maple; and of finding a Pestalotia sp. in needles of Abies, on both leaves and twigs of Rhododendron, cultured from twigs of a wilted Taxus sp., and from twigs of a dying sugar maple.

NEEDLE CAST DISEASES

A report on the needle cast diseases of Douglas-fir in Christmas tree plantings tells of Adelopus-infected trees looking very bad, with dry weather of early May influencing the rate of leaf casting. Many trees weakened by Adelopus are attacked by Armillaria mellea. Rhabdocline needle cast is not as common as that caused by Adelopus, at least in Vermont, New Hampshire, and Connecticut. It is, however, quite bad in New York plantations, especially near Cortland. A report from Massachusetts tells of finding the conidial stage of a leaf cast disease, probably a Hypoderma sp., on needles of Pinus resinosa at South Hadley. Lophodermium rhododendri was cultured from leaves of Rhododendron collected at Wharton, Pennsylvania.

RUSTS

1959 was generally not favorable for rust diseases. Few reports of the rusts have been received. From New York comes word that little blister rust is believed to have spread to white pines this year because of unfavorable weather for dissemination of spores from infected Ribes to pines. During the 1959 Ribes-eradication season some three-quarters of a million Ribes were destroyed on approximately 230,000 acres of control area. Results of Acti-dione studies to date indicate that blister rust cankers can be effectively killed by slitting bark around the infected area and spraying with a solution of 150 ppm. of Acti-dione and kerosene. Getting penetration without slitting the bark appears to be the biggest problem at this time. West Virginia reports rust infection of Ribes as moderate, with 10 to 15 percent of the leaves infected. Telia production was light. Defoliation occurred early due to lack of rain in August and September.

The only report of a serious rust condition comes from Maine which stated that red pine needle rust (Coleosporium asterum) was so heavy on small planted trees in Windham and Westbrook that trees appeared orange in color. Massachusetts reports a Coleosporium, probably the same species, from red pine in Pelham. The latter State also reports ash leaf rust (Puccinia sparganioides) from South Orleans. New Hampshire reports ash leaf rust of minor importance, and probably so for 1960, due to a scarcity of overwintering inoculum. The same rust in Maine was negligible as a dry spring, during spore discharge from the marsh grass alternate host, aided in keeping infection down. The same source reported spruce needle rust as light in localized areas in the New Harbor and Boothbay Harbor areas.

WILT DISEASES

Dutch elm disease.--Reports received for this issue of the PEST REPORTER on Dutch elm disease tells of its severity and rapid localized spread. A mid-season report from Maine states that although symptoms of the disease were somewhat delayed by the prolonged, cool, wet spring, 57 new infections involving 9 additional towns

(South Portland, Lincolnville, Caratunk, Bridgewater, Lovell, Waterford, Bradley, Medway, and Greenwood) had been located, bringing the total infected towns to 73. Pennsylvania reports an increase in Dutch elm disease throughout the State. Maryland also reports considerable spread of the disease, with Towson and Dundalk sections particularly hard hit. A report from Massachusetts states it as being more prevalent than usual, and New Hampshire also reported it as serious in 1959.

Verticillium wilt.--Perhaps Verticillium wilt was less in 1959 than 1958. Few reports on the disease have been received. Massachusetts reports isolations from red and sugar maples. Pennsylvania tells of cases brought to their attention, including isolations from Japanese maple; and some thinning out of roadside trees in Vermont appears, in part at least, to be due to Verticillium. Although the trend in Dutch elm disease apparently shows an increasing number of cases, late reports on Verticillium wilt are needed to evaluate its comparative seriousness with other years.

Oak wilt.--Oak wilt reports are not complete enough to evaluate its damage and trends for the season. Only one has been received which reports winding up activities in Pennsylvania for the season which, incidentally, may extend to November. Air scouting has been suspended. The count on areas found in 1959 are: single tree infections 69; group infections 187; old area breakovers 70; total of all areas found 326. It is believed the total areas will be about 400 by the time the season closes. This year, air scouting was hindered more than usual by storms. Maryland reports dead oak spots on South Mountain, near Gapland. Oak wilt is suspected, but cultural confirmation has not yet been received.

Mimosa wilt.--Mimosa wilt is suspected to be the cause of spot mortality of mimosa trees on the lower Eastern Shore of Maryland.

ROOTS

Root rots.--New infections of Fomes annosus were numerous both in 1958 and 1959. It is believed that the severe drought of 1957 weakened many trees rendering them more susceptible to attack by this fungus, or produced conditions favorable for more rapid spread of the disease. It was observed that trees infected by F. annosus were also attacked by Dendroctonus sp. In 1958 red pines were observed attacked by Dendroctonus, but still living; in 1959 F. annosus was found on some of these trees. It is considered likely that trees infested by Dendroctonus may be more susceptible to attack by F. annosus. In early 1959 observations of plot trees and stumps, previously found with small fruiting bodies of F. annosus, were carefully inspected for visible signs of the fungus and in some instances it could not be found. These trees will be re-inspected this fall to ascertain whether F. annosus fruiting is present, whether old fruiting was reactivated, or whether signs of infection are still absent. Following the first visible signs of infection by F. annosus, the time of death of still living trees upon which such infection has been found will be noted, and also whether some trees are able to survive and outgrow these infections. This root rot appears to be increasing in the conifer plantations, especially those of red pine, in the Northeast. Pennsylvania tells of white pines appearing healthy but with roots badly rotted by F. annosus; the trees undergo serious blowdowns soon after thinning. These same conditions have been observed through our territory. Many States have stepped up work on the F. annosus problem. New deaths from the rot apparently declined in Connecticut in 1959. New York reports locating the disease in Letchworth State Park in the western part of the State.

Concerning other root rots, Massachusetts tells of Armillaria mellea occurring on Cornus florida in the understory in woods near Greenfield. The same disease continues to be instrumental in the decline of red pine at the Groton State Forest near

Plainfield, Vermont. In fact A. mellea appears as common as usual, if not more so, this year. Polyporus schweinitzii was commonly observed in old, mature stands of white pine in a number of New England locations, but the conks observed were mostly old fruiting bodies, with very few freshly-formed conks present. This year was not a very good year for P. schweinitzii fruiting. One 30-year-old larch plantation was observed in New Hampshire where P. schweinitzii root and butt rot was rampant; considerable blowdown occurred as a result. Coniophora puteana, a common, brown root rot of conifers, was observed fruiting on the outer bark of dead, standing white pines in New Hampshire. The fruiting was often 15-20 feet above ground in the lower and middle crowns of these standing dead trees. It was also common on down trunks, logs, and limbs on the forest floor, where it normally is found.

Trunk rots.--Steccherinum septentrionale was unusually abundant in central Massachusetts and southern New Hampshire this year, and quite common elsewhere. Sugar maple is its most common host, but occasionally beech trees are infected, and in one case, it occurred on horsechestnut. This latter host is unusual and may be a new host record for the organism. Fomes applanatus, a common saprophyte of hardwoods and more rarely of conifers, seemed to occur in unusual abundance this year on declining, but living, maple, beech, and birch trees. Polyporus squamosus was observed in late July and early August. Fresh fruiting is commonly seen during the spring months, but it occasionally may fruit during the fall.

NURSERY DISEASES

Root rots in forest nurseries of the Northeast are becoming more prevalent. Serious troubles are apparent in Vermont, New Hampshire, Pennsylvania, West Virginia, and New York. An interesting case of a nursery damping-off complex was present in the Essex Junction nursery (Vermont), where the addition of superphosphate effectively held down losses. Fertilizer deficiency troubles commonly occur in many new nursery sites and a few years are required before these lands yield good healthy stock free from minor diseases favored by poor nutrition. Gylindrocladium scoparium affecting white pine at the old Essex Junction nursery in Vermont was observed, and seemingly occurred only in severely overstocked beds.

OAK MORTALITY

The following has been taken from the August ENT-PATH NEWSLETTER of Pennsylvania. "A tract near Neff's Mills, where a third of the merchantable scarlet and red oak were standing dead and dying. One felled scarlet oak showed dead roots and crown, although the trunk still had green cambium. Insects had invaded the tree. Leaves had flushed in the spring but had not matured before the tree died. There was evidence of Armillaria mellea. The annual rings had not varied in width since the dry period in the 1930's, but ceased growing abruptly with the 1959 springwood." Pennsylvania also reports oak dieback, principally scarlet, as serious near Petersburg, Livonia, and Pine Grove Furnace.

DIEBACKS

It is our general impression that the sugar maple dieback situation shows some improvement in the New England States; but this may be a misconception based on the fact that so many trees have died during the 1958 and 1959 seasons that those remaining look comparatively better. Maples in western New York, south of the Rochester area, are in bad shape. Pennsylvania reports "many cases of leaf scorch to hardwoods" observed in August and September and some parts of Pennsylvania also have bad dieback areas. With the approach of fall, maple leaf scorch symptoms of the dieback complex have become intensified. A New Hampshire report considers the condition of roadside maples the most striking tree problem in 1959. Verticillium wilt and bleeding canker appear to play a minor role in this maple decline. Highway salting is believed to be

a factor, or at least partially responsible for the condition of these trees. New York personnel consider the deterioration of ash, beech and maple among their major disease problems. It seems to us that the ash dieback situation shows some improvement, since fewer cases of it have been noted during 1959 than for the past several seasons. However, a report of ash trees with severe decline and reduced vigor, with many of them dying in the Poughkeepsie area of New York, has been received. The report says that one may look across a valley and see 15 to 20 dying ash trees in this area. We have also received word from New York of a deterioration of black walnut which has not been reported previously. Black walnut commonly occurs as forest and shade trees in Ontario and Livingston, as well as in portions of Alleghany County. In many low-lying areas notable limb mortality and crown deterioration has been noted. Concentrations of this disturbance were found in the section between Hemlock and Honeoye Lakes.

It is reported that birch dieback and beech scale-Nectria together have done so much damage to old-growth stands in the White Mountain area of New Hampshire that, by the time they are salvaged and decadent sugar maple has been cut, there will be little left standing over a large portion of this area. Birch dieback, in Maine, has remained fairly stable, according to a late report from that State.

MISCELLANEOUS

Dwarf mistletoe continues to be a problem on white and red spruce around summer camps and estates in some of the coastal parts of Maine. Herbicides are being tested for control of the pest. The same source reports a witches'-broom of larch, some 10 to 12 feet in diameter, near Greene, Maine. Similar brooms have been noted in the past in Unity and Washington, Maine, and your reporter has observed the same thing in the Adirondack region in New York. These brooms on larch are not common, and their cause is unknown.

So many reports of non-pathogenic troubles have been received that details cannot be given. Reports from Massachusetts include: root girdling affecting at least 8 species; decay entrance through improper pruning from at least 10 species; planting too deeply involving 5 species; fill injury suffered by a number of species; mechanical and construction damage as being very common; trees killed by natural gas leaks, mainly in the eastern part of the State; late frost damage and frost cracks; lightning damage; herbicide damage; bird damage; and winter killing and winter injury. Additional reports of winter killing and injury were received from Maine and Pennsylvania -- the latter reporting damage to nursery ornamentals. Maine reported hail injury from South Paris, and injury to several species of trees by toxic fumes. Reports from Massachusetts and Maine indicate that herbicide injury is a common occurrence, as herbicide usage increases for line clearance, weed control in field crops, lawns, and along roadsides.

Reports of animal damage were as follows: Maine--heavy feeding on Scotch pine buds by Grosbeaks near Harrison and severe sapsucker injury to Austrian pine was observed in Lewiston; Massachusetts also reports sapsucker attack on birch species in South Hadley; Vermont--deer damage to hemlock, with stripping of bark to heights of 6 to 8 feet on trees up to 10 inches in diameter, located west of Bethl.

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Nominations for the most noteworthy, striking or important diseases in 1959. [Not to be taken too seriously -- most collaborators did not want to stick their necks out on a proposition like this.]

Maryland - Dutch elm disease.

New Hampshire - "most striking tree problem" - Maple dieback.

New York - "most important" - White pine blister rust; Fomes annosus; beech deterioration; ash dieback; maple deterioration.

Pennsylvania - "most noteworthy" - probably the unexplained oak mortality; widespread black spot of elm and black walnut anthracnose during late summer.

Your reporter's - Dutch elm disease; maple dieback; Fomes annosus in conifer plantations.